CONSTRUCTION PRODUCTS SOLUTIONS™

METHOD STATEMENT
warm roof fixings for over rafter pitched roof insulation systems

Introduction

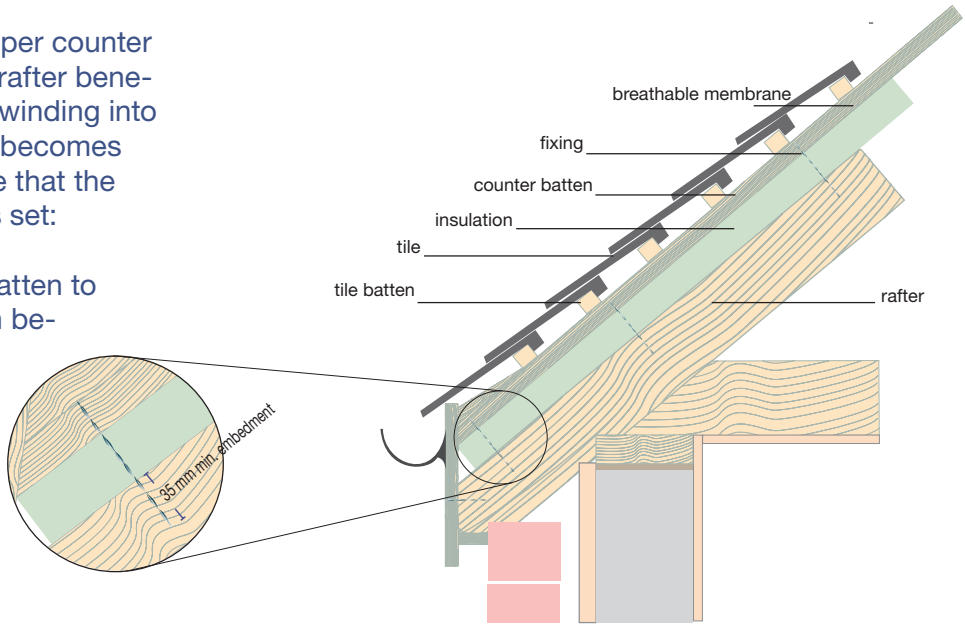
Suretwist is a second generation Thor Helical fixing that is used to secure and sandwich a layer of insulation over the structural roofing timbers in energy efficient buildings.
Unlike normal nails the Suretwist has no clamping head and does not depend on shaft friction. Instead, when hammered, it relies on the angular faces of pronounced helical fins to induce a self-tapping penetrative action. The winding helix binds with the timber to alleviate splitting tendancies and to create a reliable helical interlock connection. The interlocking helical form provides the Suretwist with a unique facility for maintaining gaps between timber members by carrying both compression and tension, thus holding timbers together and also holding them apart.

Description

The Suretwist is installed through an upper counter batten and a layer of insulation into the rafter beneath. As soon as the leading end begins winding into the rafter, the gap between the timbers becomes fixed and cannot be adjusted. To ensure that the correct distance between the timbers is set:

a) Apply body weight to the counter batten to hold it firmly and tightly to the insulation before driving the Suretwist into the rafter to establish the finishing gap.

b) Work from one end of the counter batten to the other or work from the middle of the counter batten towards each end. Avoid fixing at both ends before working towards the middle.



Testing

Independent laboratory tests have been carried out on the Suretwist, counter batten and rafter arrangement with gaps of up to 150mm being set between timbers to replicate a wide variety of site conditions. The Building Research Establishment has applied a design method, which includes factors of safety taken from the National Annexes of Eurocodes 0 and 5, to establish 'BRE verified' load density tables that are specific to the Suretwist second generation Thor Helical product.

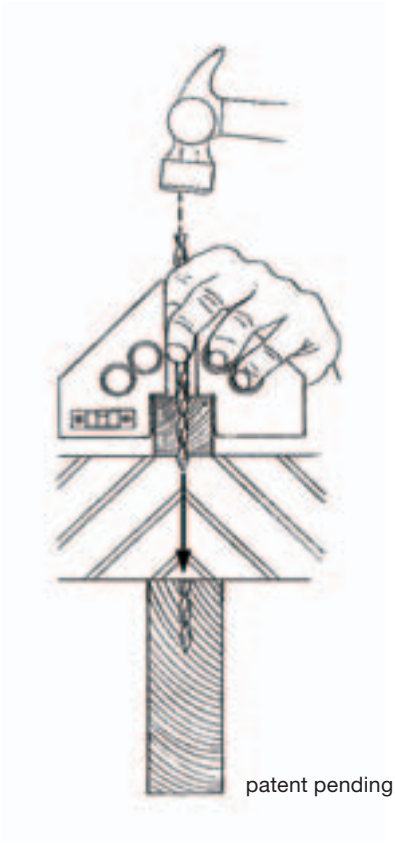
Installation Procedure

In most situations the Suretwist is hammered directly into the timber. In rare circumstances, characteristically involving hardwoods, a pilot hole may be used to ease driving and guide the fixing through the timber. Typically the diameter of a pilot drill should be at least 2mm less than the diameter of the Suretwist to ensure sufficient interlocking with the timber.

Driving

1. Position the counter batten directly above the rafter, which is hidden below the insulation.
2. Press down on the counter batten to ensure it is secured tightly onto the insulation layer.
3. Align the Suretwist squarely to the centreline axis of the counter battten and hammer home using:

    a) a conventional hammer or
    b) an SDS adapter fitted to a hammer drilling machine.



patent pending

Alignment

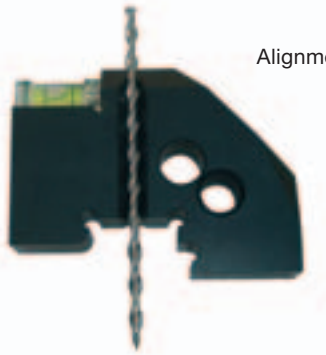
If the combined depth of the counter batten and insulation layer exceeds twice the width of the rafter hidden below or if the counter batten is warped, an Alignment Square must be used to avoid problems asociated in skew-driving. The Alignment Square sits onto the counter batten and provides means to centrally align and constrain the Suretwist during installation.

Support Tools

The Suretwist is sufficiently robust to usually be used without the need of support tools. We recommend the use of tools for 6mm fixings over 125mm long, 7mm fixings over 155mm long and 8mm fixings over 175mm long. We have a range of support tools to accommodate ease of use and correct installation. Contact CPS technical helpline tel: 01279 505 514 for further advice.

Hand Driving Tool

SDS Adapter



Alignment Square

Point to note

Once fixed at the recommended density the battens will feel longitudinally secure, but may feel a little springy in the horizontal plane if the gap is not set tightly enough. This springiness will be allleviated by the bracing effect of the tile battens which will provide additional lateral rigidity.